Abstract Submitted for the MAR09 Meeting of The American Physical Society

Topological spin textures in strongly interacting quantum dots JORDAN KYRIAKIDIS, CATHERINE J. STEVENSON, Dalhousie University, Halifax, CANADA — We present results of configuration-interaction calculations on two-dimensional quantum dots confining charges with long-range Coulomb repulsion. We focus on correlation-induced spin textures formed at zero magnetic field. By looking at chiral structures, at two- and three-point spin-correlation functions, and at explicit symmetry-breaking fields, a consistent picture emerges of incipient topological spin textures formed throughout the dot and particularly at annular regions of increased electron density. In addition to singular vortex-type structures, 2π -windings are observed in the spin field along these annular regions. These textures are solely due to statistics and repulsion.

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Date submitted: 21 Nov 2008

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